

IN THE CLAIMS:

Below is a complete listing of the claims:

1. **(Currently Amended)** A viscoelastic polyurethane foam comprising a reaction product of:

an isocyanate component;

an isocyanate-reactive component comprising a flexible polyol and an ethylene-oxide rich polyol having an ethylene-oxide group content of from 40 to 95%;

said isocyanate component and said isocyanate-reactive component reacted at an isocyanate index of from 80 to 105;

a chain extender having a backbone chain with from two to eight carbon atoms and having two isocyanate-reactive groups and a weight-average molecular weight of from 25 to 250, wherein said chain extender is used in an amount of from 7 to 30 ~~5 to 50~~ parts by weight based on 100 parts by weight of said foam; and

said foam having a glass transition temperature of from 5 to 65 degrees Celsius and a tan delta peak of from 0.40 to 1.75 and a density of from 2.5 pounds per cubic foot to 25 pounds per cubic foot.

2. **(Cancelled).**

3. **(Cancelled).**

4. **(Previously Presented)** A viscoelastic polyurethane foam as set forth in claim 1 wherein said chain extender is used in an amount of from 7 to 15 parts by weight based on 100 parts by weight of said foam.

5. **(Original)** A viscoelastic polyurethane foam as set forth in claim 4 wherein said chain extender has a weight-average molecular weight of less than 100.

6. **(Cancelled).**

7. **(Previously Presented)** A viscoelastic polyurethane foam as set forth in claim 1 wherein said chain extender is a diol having hydroxyl groups as said isocyanate-reactive groups.

8. **(Original)** A viscoelastic polyurethane foam as set forth in claim 1 wherein said chain extender is further defined as having from two to six carbon atoms.

9. **(Original)** A viscoelastic polyurethane foam as set forth in claim 8 wherein said chain extender is selected from at least one of 1,4-butanediol, 1,3-butanediol, 2,3-butanediol, 1,2-butanediol, 1,3-propylene glycol, and 1,5-pentanediol.

10. **(Previously presented)** A viscoelastic polyurethane foam as set forth in claim 8 wherein said chain extender is selected from at least one of ethylene glycol, diethylene glycol, and polyethylene glycols having a weight-average molecular weight of up to 200.

11. **(Previously presented)** A viscoelastic polyurethane foam as set forth in claim 8 wherein said foam has a glass transition temperature of from 15 to 35 degrees Celsius and a tan delta peak of from 0.9 to 1.5.

12. **(Original)** A viscoelastic polyurethane foam as set forth in claim 1 wherein said isocyanate component is further defined as:

pure diphenylmethane diisocyanate in an amount of from 50 to 99 parts by weight based on 100 parts of said isocyanate component; and

polymeric diphenylmethane diisocyanate in an amount from 1 to 50 parts by weight based on 100 parts of said isocyanate component.

13. **(Original)** A viscoelastic polyurethane foam as set forth in claim 12 wherein said pure diphenylmethane diisocyanate is further defined as:

diphenylmethane-2,4'-diisocyanate in an amount of from 1 to 45 parts by weight based on 100 parts of said pure diphenylmethane diisocyanate; and

diphenylmethane-4,4'-diisocyanate in an amount from 55 to 99 parts by weight based on 100 parts of said pure diphenylmethane diisocyanate.

14. **(Original)** A viscoelastic polyurethane foam as set forth in claim 13 wherein said isocyanate component is further defined as an isocyanate-terminated prepolymer.

15. **(Previously Presented)** A viscoelastic polyurethane foam as set forth in claim 14 wherein said prepolymer comprises a reaction product of an isocyanate and a polyol having a weight-average molecular weight greater than 1,000, said polyol being used in an amount of from 1 to 20 parts by weight based on 100 parts of said isocyanate component.

16. **(Original)** A viscoelastic polyurethane foam as set forth in claim 1 wherein said reaction product further comprises a cross-linker in an amount of from 2 to 18 parts by weight based on 100 parts by weight of said foam.

17. **(Original)** A viscoelastic polyurethane foam as set forth in claim 16 wherein said cross-linker is further defined as being an amine-based cross-linker.

18. **(Original)** A viscoelastic polyurethane foam as set forth in claim 17 wherein said amine-based cross-linker is selected from at least one of triethanolamine, diethanolamine, ethylene diamine and alkoxylation product thereof having a hydroxyl number of greater than 250.

19. **(Cancelled)**

20. **(Previously Presented)** A viscoelastic polyurethane foam as set forth in claim 1 wherein said isocyanate-reactive component has a hydroxyl number of from 20 to 200 mg KOH per gram of said isocyanate-reactive component.

21. **(Original)** A viscoelastic polyurethane foam as set forth in claim 1 wherein said reaction product further comprises a monol in an amount of from 1 to 15 parts by weight based on 100 parts by weight of said foam.

22. **(Original)** A viscoelastic polyurethane foam as set forth in claim 21 wherein said monol is selected from at least one of benzyl alcohol, 2,2-dimethyl-1,3-dioxolane-4-methanol, and alcohol ethoxylate.

23. **(Original)** A viscoelastic polyurethane foam as set forth in claim 1 wherein said reaction product further comprises a cell opener having at least one of a paraffinic, cyclic, and aromatic hydrocarbon chain and is present in an amount of from 1 to 15 parts by weight based on 100 parts by weight of said foam.

24. **(Original)** A viscoelastic polyurethane foam as set forth in claim 23 wherein said cell opener is mineral oil.

Claims 25-47 (Cancelled)

48. **(Previously Presented)** A method of forming a viscoelastic polyurethane foam comprising the steps of:

providing an isocyanate component substantially free of flame retardant;

providing an isocyanate-reactive component comprising a flexible polyol and an ethylene-oxide rich polyol having an ethylene-oxide group content of from 40 to 95%;

providing a chain extender having a backbone chain with from two to eight carbon atoms and having two isocyanate-reactive groups and a weight-average molecular

weight of from 25 to 250, wherein the chain extender is used in an amount of from 7 to 30 parts by weight based on 100 parts by weight of the foam;

reacting the isocyanate component, the isocyanate-reactive component, and the chain extender at an isocyanate index of from 80 to 105 to form the foam having a tan delta peak of from 0.40 to 1.75 and having a density of from 2.5 pounds per cubic foot to 25 pounds per cubic foot; and

adjusting the amount of the chain extender to provide the foam with a glass transition temperature of from 5 to 65 degrees Celsius corresponding to a use temperature of the foam.

49. **(Cancelled).**

50. **(Cancelled).**

51. **(Previously Presented)** A method as set forth in claim 48 wherein the step of providing the chain extender is further defined as providing the chain extender in an amount of from 7 to 15 parts by weight based on 100 parts by weight of the foam.

52. **(Original)** A method as set forth in claim 51 wherein the step of providing the chain extender is further defined as providing the chain extender having a weight-average molecular weight of less than 100.

53. **(Cancelled).**

54. **(Previously Presented)** A method as set forth in claim 48 wherein the step of providing the chain extender is further defined as providing the chain extender as a diol having hydroxyl groups as the isocyanate-reactive groups.

55. **(Original)** A method as set forth in claim 48 wherein the step of providing the chain extender is further defined as providing the chain extender having from two to six carbon atoms.

56. **(Original)** A method as set forth in claim 55 wherein the step of providing the chain extender is further defined as providing the chain extender selected from at least one of 1,4-butanediol, 1,3-butanediol, 2,3-butanediol, 1,2-butanediol, 1,3-propylene glycol, and 1,5-pentanediol.

57. **(Previously presented)** A method as set forth in claim 55 wherein the step of providing the chain extender is further defined as providing the chain extender selected from at least one of ethylene glycol, diethylene glycol, and polyethylene glycols having a weight-average molecular weight of up to 200.

58. **(Previously presented)** A method as set forth in claim 55 wherein the step of reacting the isocyanate component, the isocyanate-reactive component, and the chain extender forms the foam having a glass transition temperature of from 15 to 35 degrees Celsius and a tan delta peak of from 0.9 to 1.5.

Claims 59-61 (Cancelled)